DOCUMENT RESUME

ED 190 052 IR 008 523

TITLE	National Education Practices File Development Project. Procedures Documentation. Product 2.1.
INSTITUTION	Bibliographic Retrieval Services, Inc., Scotia, N.Y.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	Feb 80
CONTRACT	400-77-0095
NOTE	76p.: For related documents, see ED 167 102-104 and IR 008 521-523.
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Data Bases: *Educational Practices: Information Dissemination: *Information Needs: Information Retrieval: *Methods: *Online Systems: *Program Development: Resource Materials

ABSTRACT

This paper documents procedures for maintaining and updating the National Education Practices File, a program designed to identify needs in education and to develop a resource system for educators. Each feature is discussed with emphasis on major issues. Documentation of procedures and discussion of issues are based on experiences of the file design and pilot test phases. Background information is furnished to provide critical, conceptual, and technical reference points supporting recommendations. In presenting recommendations for the full implementation of the file, this document has been prepared as a self-contained procedures manual. The reader should also review documentation prepared for Phase 1 or Phase 2, Product 2.4 (Management and Implementation Plan for Future Expansion of the Practices File), which contain supplementary and complementary material. Other related materials are Informex (Product 2.6)--the content announcement sample--and the Descriptor Posting (Product 2.2)--the controlled vocabulary. In addition to a feature by feature delineation of background, issues, and recommendations, separate sections are presented on the organization for operating the file and on the pilot test operational costs. (Author/RAA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

BRS *Bibliographic Retrieval Services, Inc.*

Corporation Park, Bldg. 702
Scotia, New York 12302
(518) 374-5011

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED190052

NATIONAL EDUCATION PRACTICES FILE DEVELOPMENT PROJECT

PROCEDURES DOCUMENTATION

PRODUCT 2.1

Submitted as part of NIE Contract #400-77-0095

February, 1980

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Gregory Benson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

IR008523

TABLE OF CONTENTS

		PAGE NO.
PREFACE		i
ACKNOWLEDGEMENTS		iv
INTRODUCTION		vi
1.0	CONTENT/ACQUISITIONS	1
1.1	Background	1
1.2	Test File Content by Type	2
1.2.1	National Diffusion Network JDRP-Approved Projects	4
1.2.2	ESEA IV-C Projects	6
1.2.3	Subject-Limited Content	9
1.3	General Recommendations	17
2.0	SELECTION	18
2.1	Background	18
2.2	Procedure Used for the Test Version of the Practices File	21
2.3	Screening Recommendations	22
3.0	PROCESSING	24
3.1	Background Discussion	24
3.2	Pilot Test File Processing Procedures	24
3.2.0.1	Receive Practice Descriptions	24
3.2.0.2	Check of "On Order File"	24
	Source Card - Table I	24
3.2.0.3	Check for Duplication	25
3.2.0.4	Accessioning	25
	Title Card - Table II	25
3.2.0.5	Check of External Form Completeness	26
	Key to Education Practices File Citation Elements - Table III	27
3.2.0.6	Internal Data Provision	28
	Internal Data Transfer Form - Table IV	29
3.2.0.7	Data Element/Paragraph Guidelines	31
3.2.0.8	Paragraph Requirements/Format and Technical	31
3.2.0.9	Data Input Procedures	40
3.2.10	Practice Description Retrieval and Review	40
3.2.11	Transmitting	41
3.2.12	Loading	41
SAMPLE I		42
3.3	Processing Recommendations	44

TABLE OF CONTENTS

		PAGE NO.
4.0	VOCABULARY DEVELOPMENT AND MAINTENANCE	45
4.1	Background Discussion	45
4.2	The Controlled Vocabulary During the Pilot Test	45
4.3	Recommendations	45
5.0	RESOURCE BASE MAINTENANCE	46
5.1	Background Discussion	46
5.2	Record Updating During the Pilot Test	46
5.3	Recommendations	47
6.0	SOURCE AVAILABILITY	49
6.1	Background Discussion	49
6.2	Source Availability During the Pilot Test	50
6.3	Recommendations Regarding Future Source Availability	50
7.0	SEARCH AND RETRIEVAL SYSTEM	52
7.1	Background	52
7.2	The Search System Used for the Pilot Test	52
7.3	Recommendations for the Future System	52
8.0	USER PRODUCTS/SERVICES	54
8.1	Background	54
8.2	Pilot Test User Products and Services	54
8.3	User Products and Services for the Future Practices File	55
9.0	ORGANIZATION FOR OPERATING THE PRACTICES FILE	57
10.0	COSTS FOR INFORMATION PROCESSING DURING THE PILOT TEST OF THE PRACTICES FILE	59
	PHASE II - PROJECT FUNDS COMMITTED TO INFORMATION PROCESSING	59

Preface

The National Education Practices File Development Project is part of an Education File Development Program sponsored by the Program on Dissemination and Improvement of Practice of the National Institute of Education. The File Development Program is designed to identify information needs in education and develop reference files to improve educator access to the needed information. One major outcome of the Program was the identification of a need for educational program and practice information targeted to practitioners.

In October, 1977, Bibliographic Retrieval Services, Inc., (BRS) was awarded a contract to develop design specifications for a National Education Practices File. The design period (Phase I) focused on the collection and documentation of ideas and suggestions from the field regarding various file features including content, acquisitions, selection, source availability, user products and services and the organization for operating the File. A review of related information products was undertaken to identify what similar files and services existed. Based on this study, and the advice of a Project Advisory Committee, comprised of dissemination specialists and educators at all levels, BRS provided NIE with a set of alternatives for further design work and possible development. A feasibility analysis of these options resulted in the recommendation of a file design for testing. This design was completed and submitted to NIE in June, 1978.

In July of that year, BRS was awarded a second contract to develop and test a Practices File based on the approved design specifications. The test file contained approximately two thousand records of programs and practices from the National Diffusion Network, state ESEA, Title IV-C programs, the San Mateo

Educational Resources Center, and numerous other sources. The File was pilot-tested for six months (mid-May through mid-November, 1979) in fourteen sites throughout the Country, including state education agencies (Alaska, Illinois and Texas), regional exchanges (NWREL and SEDL), intermediate service agencies (Wayne County, Michigan; San Mateo County, California), teacher centers (Mid-Coast - Camden, Maine; The Exchange - Minneapolis), an ERIC Clearinghouse (Math, Science and Environmental - Ohio State), an information broker (Educational Resources Library, National Institute of Education), a library network (University of Missouri), and large, urban school districts (Atlanta and Washington, D.C.). The Phase II activities are scheduled to conclude in February, 1980.

Three major documents were produced as a result of Phase I activities:

- Preliminary Design Feature Alternatives and Discussion of Their Feasibility for a National Education Practices File (March, 1978) presented a delineation and an analysis of three major design alternatives for the File.
- Education Practices File Design (June, 1978) presented detailed specifications for the development and operation of the design alternative selected by NIE.
- Revised Phase II Plan for the National Education Practices File Development Project (June, 1978) contained a plan for pilot testing and evaluating the File and a plan for operating a Practices File clearinghouse operation.

Major reports prepared during Phase II of the File Development Project include:

- Procedures Documentation (January, 1980) contains comprehensive documentation of the specifications and operations of procedures for maintaining and updating the File.

- Pilot Test Operation and Evaluation (January, 1980) contains a detailed description of the development and operation of the network of pilot test sites over the six-month test period. Evaluation of the site operations and of clients' initial assessments of the File are also presented.
- Implementation and Management Plan for Future Expansion of the National Education Practices File (January, 1980) contains a detailed plan for managing the File in an operational mode. The plan is based on results of the pilot test and specifies objectives, functions and organizational and operational structures for the management of the File.

The outcomes of these activities and products will assist the National Institute of Education in developing and maintaining a resource system targeted to the information needs of practitioners and to supporting educational practice improvement efforts.

Acknowledgements

Undertaking so complex a project inevitably requires the cooperation and collaboration of many individuals, groups and organizations. Each of our accomplishments is supported by many people throughout the Country and we extend our sincere thanks to all.

We owe special thanks to the pilot site managers and staff. We know that we received much more than we gave in advice and support. Without their extra efforts undertaken in using and critiquing the File, it would not be possible to provide any reasonable plan for further development and expansion.

We are also grateful for the guidance provided by our Project Advisory Council members: Edward Ball, Harper and Row Publishers; Rodney Barth, Illinois Office of Education; Ted Brandhorst, ERIC Facility; Donald Ely, ERIC Clearinghouse for Information Resources; George French, Philadelphia School System; Thomas Hartsig, Macomb Intermediate School District; Kenneth Komoski, Educational Products Information Exchange; Diane Lassman, The Exchange Teacher Center; Diane MacIntyre, Far West Laboratory; Joel Magisos, National Center for Research in Vocational Education; Harry Osgood, Area Cooperative Educational Service Center; and Frank Thompson, ECOS Training Institute.

We acknowledge with special thanks the support and advice of NIE staff, particularly our project monitors, Mollie McAdams and Jacques Nacson. The Internal Advisory Group members provided timely guidance and advice. For their help we thank Robert Chesley, John Coulson, Jerry Fletcher, Sue Klein, Charles Missar, Jon Schaffarzick, and Lou Walker. Also within NIE, we recognize the leadership provided to this effort by Charles Hoover and Michael Kane.

Finally, we recognize the consultants who have assisted us in various stages of the design and pilot test work. Carolyn Trohoski and Richard Brickley provided essential research and design support; Ronald Sczcypkowski and Ann Pollinger conducted the pilot test evaluation activities; and Richard Lavin and Jean Sanders managed the pilot operation. Their splendid work was invaluable, as was their team spirit. Charles Mojkowski provided extensive and invaluable conceptual and operational support to the Project and Barbara Christie assisted with the development of the printed products.

Within BRS, several staff are worthy of commendation. Robert Hamilton headed the technical team responsible for the computer processing; Jeff Westcott developed and maintained the online user data-collection system; Edward Hancock, Barbara Derrick and Marian Hasslacher managed the clearinghouse operation, and Lillian Greco coordinated the completion of all project reports.

To all those cited above, we extend our warm regard for your contributions.

Gregory Benson, Jr.
Project Director

Ronald Quake
President
BRS, Inc.

Introduction

The purpose of this product is to document procedures for maintaining and updating the Practices File. Each feature of the test version of the File is discussed with a particular emphasis on major issues. The documentation of procedures and the discussion of issues is based on experiences of the File design and pilot test phases. Background information is furnished to provide critical conceptual and technical reference points supporting recommendations. Thus, where recommended procedures deviate from those for ERIC or for traditional file development and management practices, ample discussion of options and issues is provided.

In presenting recommendations for the full implementation of the File, this document has been prepared as a self-contained procedures manual. The reader should also review documentation prepared for Phase I (ED 167 102 through ED 167 104) or to the Phase II, Product 2.4, Management and Implementation Plan for Future Expansion of the Practices File, which contain supplementary and complementary material. Other related materials are Informex (Product 2.6), the content file announcement sample and the Descriptor Posting (Product 2.2), the controlled vocabulary.

In addition to a feature-by-feature delineation of background, issues, and recommendations, separate sections are presented on the organization for operating the File and on the pilot test operational costs.

1.0 CONTENT/ACQUISITIONS

1.1 BACKGROUND

The National Education Practices File Program Announcement specifies that the project will be limited to "school practice-oriented groups and their preferences for information as indicated by the Study of Information Requirements in Education" (Hood, 1976). Included as the target audience within the school practice-oriented groups are: teachers, principals, other instructional staff, and intermediate unit staff. The program announcement indicates that the information preferences of these groups include: "classroom and curriculum-related materials, solutions to common educational problems, educational trends and issues, educational news and current events and information for the evaluation of educational programs and practices."

Since an NIE decision was made not to actively acquire and include commercially-developed educational materials in the Practices File, the initial view of practices as potential content was:

- Classroom materials
- Curriculum and related materials
- Descriptions of programs or techniques that provide solutions to educational problems
- Educational trends and issues
- Educational news and current events

During the initial design phase of the project, through interviews with educators representing all areas and levels of education in the United States, the above possible content types were narrowed to the first three by the NIE Internal Advisory Committee. Since commercial materials were not to be included in the test version of the Practices File, the source of educational

materials and programs focused primarily on those developed and or supported by public funds at the local, state or federal levels, and content already organized by educational programs or organizations. This focus was not meant to exclude input from private, non-profit sources or out-of-pocket support sources such as an individual teacher that develops his/her own "kit" for the instruction of "how to tell time".

Based on this focus, the following definition of "practice" was established:

> "Public or private, non-profit-supported curriculum, classroom materials and descriptions of educational programs and practices operable in or for elementary and secondary public and private schools in the United States."

Undoubtedly, there are differing points of view regarding what are educational practices. Few of these points of view, however, have the benefit of an intensive investigation with potential users as afforded by this project, and an operationally defined purpose with related program parameters and objectives. In addition, well-known references such as the Dictionary of Education prepared under the auspices of Phi Delta Kappa do not attempt to define "educational practice" except as it relates to learning theory (e.g., practice for skill mastery or practice teaching). Therefore, the definition established served as a guide for acquiring information for input to the test version of the File.

1.2 TEST FILE CONTENT BY TYPE

The following sections provide an overview of the content types contained in the pilot test version of the National Education Practices File. Each section reviews the special acquisition relationships required for each, the abstracting

and indexing requirements, and any special arrangements with agencies that facilitated the inclusion of the content type. In addition, a brief discussion of unique delivery arrangements for specific audience groups is mentioned in those cases where such arrangements have been made. Lastly, any issues associated with the content type are raised if they have been identified as significant by the project staff.

It should be noted that though the intent of the pilot test of the Practices File was to acquire and deliver local education practices, the findings of the design phase of this project dictated that the initial thrust be to coordinate a number of previously organized educational practice resource bases and thus provide coordination to the previously fragmented resource base (see Phase I documentation, ED 167 102 through ED 167 104). For instance, educators surveyed during the design phase clearly indicated an interest in the JDRP-approved projects which are part of the National Diffusion Network. Educators also expressed an interest in state-validated or exemplary projects funded by the Title IV-C process in each state. Other readily available educational practice resource bases suggested by educators included those materials collected by the San Mateo Educational Resource Center and those practices cited in the 1972 catalog published by the National Institute of Education entitled Promising Educational Programs and Practices. Since the pilot test data base was limited to 2,000 records, it quickly became apparent that a major portion of the pilot test version of the Practices File would be material collected from existing resource bases. This need expressed by educators around the country clearly indicated the frustration with the fragmented sources of information related to educational practice. While there are a number of other resource bases of interest to educators that are being developed by local, regional, and state agencies, they

are not familiar to educators in general and consequently were not mentioned frequently. Also, a number of practice resource bases have emerged since the conduct of the design phase for the Practices File. Some of these include practices identified through Teachers Centers and Teacher Corps projects. Also, the NIE-sponsored Research and Development Utilization projects have collected resources for serving their particular content and audience groups. Some of those materials have been included in the file and are mentioned below.

Since it was evident that a large variety of practice resource bases already existed and educators desired the coordination of these resources as a first priority, the project focused on the major organized practice resource bases. This provides a test of an acquisition network of a much different nature than that appropriate for locally developed practices sought out individually. The Implementation and Management Plan (Product 2.4) specifically addresses that issue.

1.2.1 NATIONAL DIFFUSION NETWORK JDRP-APPROVED PROJECTS

Probably the most recited information base to be included in the Practices File was the JDRP- Approved Projects disseminated by the National Diffusion Network. These projects appear in an Office of Education publication entitled OE Programs That Work and are updated every year. The production of this catalog and the updating activities are accomplished by the Far West Educational Laboratory and BRS project staff acquired the most recent project information available through the cooperation of Far West Lab staff.

Since a large number of educators are familiar with the NDN format, every effort was made to maintain that format and length of description whenever possible. Consequently, the NDN project descriptions are by far the longest descriptions contained in the database.

With regard to source documentation related to NDN projects, as a result of an ERIC/NDN Liaison Committee meeting held in Connecticut in 1978, it was agreed that the ERIC facility would collect the NDN documentation and enter what was deemed appropriate into the ERIC system. As this was accomplished, the ERIC facility was to notify the Practices File staff so the test file might reference the NDN source documentation for those projects to which it is relevant. As of this writing, no such notifications have been received.

Lastly, since the Far West Laboratory is responsible for updating the OE Catalog of Programs That Work which contains the NDN project descriptions, coordination with that agency resulted in the routine monthly receipt of update information by project staff for test file updating.

The acquisition relationship was easily accomplished for this content type since the information management function is efficiently centralized by the NDN program at the Federal level. It is recommended that this relationship be maintained.

A comparison of the effectiveness of this acquisition arrangement is illustrated dramatically by the table below:

Major Educational Data Base Comparison Search on the Free Text Phrase "Nationally (adj.) Validated"

DATA BASE	NUMBER OF HITS
Practices File	252
ERIC	15
DISS	1
NIMI	0
ECER	3

Lastly, since the Far West Laboratory is responsible for updating the OE Catalog of Programs That Work which contains the NDN project descriptions, coordination with that agency resulted in the routine monthly receipt of update information by project staff for test fiel updating.

The acquisition relationship was easily accomplished for this content type since the information management function is efficiently centralized by the NDN program at the Federal level. It is recommended that this relationship be maintained.

1.2.2 ESEA IV-C PROJECTS

During the design phase of the project it was evident that Title IV-C exemplary and demonstration projects as well as second and third-year developer projects were of interest to local educators around the country. Consequently, an effort was made to acquire those project descriptions and include them in the file. The effort was initiated with a letter to each Title IV-C state coordinator in the Fall of 1978 after being approved by OE Title IV-C staff. The response to that letter was extremely gratifying in that nearly 25 state coordinators responded within two to three weeks. A follow-up letter was sent to the non-responding States using an updated list provided by the Title IV-C Office in the Office of Education. This initial acquisition effort, supplemented by the follow-up effort, has resulted in a significant number (over 400) of Title IV-C state-validated, demonstrator, and developer projects in the pilot test version of the Practices File.

The inclusion of these project descriptions is not free of user access problems. For example, Title IV-C regulations prohibit projects from using project funds to disseminate information and/or respond to inquiries from out of state. Therefore, conversations with OE staff led to the decision that each

Title IV-C project included in the pilot test version of the Practices File would indicate a dissemination limitation that prohibits responding to out-of-state inquiries. OE staff indicated that an acceptable alternative would be the referral of out-of-state inquiries to the appropriate Title IV-C state coordinator since that position does include responsibility for dissemination beyond state lines.

In addition to Title IV-C regulatory limitations on project dissemination activities, some Title IV-C State coordinators expressed anxiety over the potential number of inquiries that might be generated what would require response by already over-burdened project staff. The pilot test did not experience any feedback of this nature form IV-C project staff but the limitation of the pilot test to fourteen sites and a six-month test period probably reduced any potential burden placed on project staff. Also, many states already include their catalog of validated projects, which include project discriptions and indication of contact people, in the ERIC system. For instance, in January, 1978, ERIC included all the 1976 New York SEA Title IV-C project descriptions in catalog form. Also in October, 1978, ERIC included all of the 1977 New York SEA Title IV-C project descriptions and lastly, a single New York State Title IV-C demonstration project was listed in ERIC in October, 1978. All of these descriptions contain project addresses and contact people. To our knowledge, the inclusion of that information in ERIC has not resulted in an excessive burden on project staff. Nevertheless, an excessive burden might result with a full-scale Practices File fully operational beyond a pilot test period. Therefore, a cooperative effort between NIE and OE to provide resources required by projects to respond to these inquiries must be studied carefully. Surely it is in the best interests of all to see that the success generated by federal funding is available to educators across the country regardless of where the success was developed.

NOTE: It is worthy noting that many local educators are most willing to share their project success in a practice file since it affords them the opportunity for national visibility. Many have also indicated their personal willingness to offer consultative assistance during the summer to other interested educators and thereby avoid a conflict with IV-C regulations. This personal commitment on the part of local educators is gratifying and can afford a tremendous diffusion potential on the personal level where most meaningful change ultimatley takes place. It has been suggested to Title IV-C state coordinators that each demonstrator be asked individually about their willingness to be included in the Practices File so they might offer such assistance during the summer. This might be a viable alternative to a single decision being made by a Title IV-C coordinator that results in the exclusion of all Title IV-C projects from a given state. The cooperation of the Title IV-C state coordinators in this matter would be extremely important since if this check with local project personnel was not conducted by them, the Practices File staff would be required to contact each project director individually. This would be an extremely expensive task and not in the best interest of disseminating federally sponsored educational success. Also, it would be extremely inefficient use of Federal funds since an adminstrative mechanism is and has been in place for some time.

Since this body of Title IV-C information represents an identifiable entity much like the National Diffusion Network Projects, no subject limitation was placed on this information included in the file.

The inclusion of these IV-C projects descriptions in the Practices File is extremely advantageous since state Title IV-C coordinators and/or IV-C project directors can update records or remove them as necessary to avoid the dissemination of erroneous information to educators across the country.

This is easily accomplished with the Practices File where addition of new records, deleting records, and changing information in specific record fields can be done quickly. For content types such as the above, there is a complementary functional relationship that can be accomplished by the cooperation of the Practices File with ERIC system. This cooperation can be manifested in much the same way that is proposed for the NDN project information. That is, source documentation for the projects can be included in the ERIC system for archival purposes and referral made to the continuously updated project description contained in the Practices File. Also, the Practices File can represent a "real time" information base relating to this content type and still refer interested educators to ERIC for backup source documentation related to the project. This complementary relationship may be appropriate for other content types as well, and may hold significant implications for the future administrative and organizational relationships between the two files. This is addressed in the Implementation and Management Plan.

The inclusion of the IV-C project descriptions is also of value to local educators wishing to explore what educators in other states are doing under IV-C funding (the essence of dissemination from a national perspective). Indeed, there is no readily available source of information on all programs funded under ESEA, Title IV-C - a serious impediment to nationwide program development and dissemination.

1.2.3 SUBJECT-LIMITED CONTENT

With the exception of a small number of updated descriptions of entries previously contained in the 1972 Catalog of Promising Educational Programs and Practices produced by the National Institute of Education (NIE), and a few materials collected by the Research and Dissemination Utilization Dissemination

Project (RDU), all of the following content types adhere closely to the subject area limitation of science, mathematics, and environmental education placed on the file by NIE as a result of Phase I design decisions.

- Information contained in the Directory of Projects and Programs in Environmental Education for Elementary and Secondary Schools produced by the ERIC Clearinghouse for Science, Mathematics and Environmental Education.

  Project and program descriptions contained in the Directory were loaded initially in an abbreviated form using information available in the Directory. It was known that much of that information would require significant updating but since the ERIC clearinghouse was updating and reprinting that directory, the Practices File did not do so. As of this writing, no updated information regarding individual projects or a copy of the updated reprint have been received by the project. In the future, a more formal arrangement with the clearinghouse should be made similar to that made with NDN for acquiring and updating the information.

- San Mateo Educational Resource Center Project and Material Descriptions (SMERC)

  Through the cooperation of SMERC, approximately 700 descriptions that were collected and made machine readable by SMERC staff were included in the Practices File. Only minimal format changes were made to convert the SMERC information to the Practices File format. This body of information was mentioned frequently as a highly desirable resource base which might be made more widely available through inclusion in the Practices File. The arrangement with SMERC for

inclusion of their practice information is limited to the pilot test. Future inclusion of content areas other than science, mathematics, and environmental education should be negotiated with SMERC. That portion of the data base contributed by SMERC is to be used for no other purpose than the pilot test of the Practices File. Both project and NIE staff are extremely grateful for the cooperation of SMERC in this pilot test effort since the information made available for the test is extremely appropriate for the Practices File and was well received by pilot site users.

Since a number of agencies are developing machine readable files of practice-related information, the arrangements with SMERC for the pilot test and any future arrangements regarding expansion of the Practices File hold significant implications for arrangements which might be made with other agencies developing practice-related files. It is recommended that a major portion of a future Practices File be information collected at regional or local levels and related to the needs expressed at those levels. The merging of these resource bases into a national practice resource system and sharing mechanism holds great potential for the future of a Practices File and is fully addressed in the Implementation Plan.

- National Education Association Inservice Education Materials

Under contract to the National Institute of Education, NEA collected and disseminated information about some 660 inservice education practices. This effort was accomplished as part of the Research and Development Utilization Program supported by the Institute. With

the close of that project nearing, NEA staff desired that their information be made available beyond the project period. Therefore, those inservice practices relating to the content areas of science and mathematics were included in the Practices File for the pilot test. Much of the source documentation related to that information is being considered for inclusion in ERIC and therefore allows for the mutual system referral to entries in the respective files. If they are found to be active efforts in schools, an expanded Practice File should contain all 660 of the inservice programs collected and described through the efforts of the NIE-sponsored RDU effort.

- State Exemplary or Promising Practice Information

A recent survey conducted in November, 1978, indicated that nearly every state education agency is involved in the development of an education resource base containing project descriptions deemed to be exemplary instructional materials, or other locally developed practices or programs. The survey also indicated that nearly 25% of those developing such resource bases either were or intended to be computerized within the next year. In light of the widespread effort to collect and organize information relevant to a National Education Practices File, much of which is sponsored or conducted through the use of NIE funds, the Practices File staff contacted appropriate state staff to ascertain their willingness to share projects contained in those state resource bases. Rather surprisingly, fewer than five state education agencies responded with the submission of project information to be included in the Practices File. In light of this minimal response, no follow-up effort has been made to date since

it appears that some generalized reluctance to participate exists. The project recommends exploration of the basis for this reluctance since those resource bases are extremely relevant to the Practices File, and most of those efforts represent the expenditure of federal dissemination funds.

Project staff can only speculate at the present time but it would appear reasonable to conclude that many state education agencies view the Practices File as a competitive effort with the potential for undermining their individual efforts to institutionalize state-wide efforts in their own agencies. Clearly, if this is the case, it is an understandable point of view. It is strongly recommended by project staff that appropriate NIE and OE staff explore strategies for acquiring that significant body of practice information for inclusion in a National Practices File. Extreme care must be taken to develop alternatives that will not threaten the stability or institutionalization of these educational practice resource base development efforts. The ultimate strength of a National File of Educational Practices will depend in large part upon the successful delineation of alternatives for participation by state education agencies and other programs. Moreover, the ultimate level of federal funding required for maintenance of both state efforts and the National Education Practices File can be significantly reduced if cooperative relationships with state education agency dissemination programs are effectively developed. The political sensitivity of this matter should not be underestimated.

- Commercial Materials

Direct acquisition and inclusion of commercial materials was prohibited for the pilot test version of the Practices File. Therefore, the only commercial materials referred to in the Practices File are those affiliated or relevant to projects or practices described and included in the test file.

The project was charged with determining whether a plan for the ultimate inclusion of commercially developed materials could be arranged. The major vehicle for the development of this plan was the American Association of Publishers. Through their Executive Committee, efforts were made to delineate a plan for the direct acquisition and inclusion of commerical materials. Though the policy to exclude these materials from direct acquisition efforts during the pilot phase is understandable in light of what might be a potential conflict between government and private enterprise, it should be noted that a large number of federally sponsored information systems do, in fact, routinely collect and make available information on commercial materials. The most obvious case of this is the Library of Congress. Also, the National Instructional Materials Information System (NIMIS) operated by the University of Southern California and sponsored by the Office of Education, derives a large number of citations from the Library of Congress, a major portion of which are commercial materials. Also, the ERIC system contains citations representing commercial materials, although the percentage of these citations is extremely small.

In light of the fact that some 90% of the practice conducted in U.S. classrooms is based upon commercially produced materials, this substantial body of practice information cannot be ignored by those responsible for the development of a National Education Practices File. In light of the previously cited ongoing efforts, the question of federal conflict with private enterprise appears to have been addressed affirmatively in precedent. The resolution of this issue will require significant effort, since there is reluctance to agree to direct acquisition of commercial material information on the part of both the government and the private sector. The reluctance in the private sector is primarily identifiable with the major, "popular" publishers since they currently hold a relative market advantage and have substantial marketing budgets. The comprehensive inclusion of commercially produced materials from a variety of sources would undoubtedly lend some advantage to small commercial producers that otherwise might not gain national exposure for their materials. This, in effect, would reduce the relative market advantage of the "popular" producers and is the source of the reluctance of major producers to participate in such an effort. Political and private competitive advantage aside, the interest of local educators are best served by a system that provides a wide range of commercially produced alternatives from which to choose for developing an instructional program. That goal should guide the discussion and decisions made by both the commerical producers and the government agencies involved in the support of a Practices File in the future.

When including descriptions of commercially produced educational materials, it is in the best interests of the educat r to also include reference to any reviews of the specific material. This would assist educators attempting to make textbook or supplementary material purchase decisions.

It should be kept in mind that there is nothing to prohibit a private undertaking to collect and make machine readable, commercially produced educational materials. The availability of such a resource would surely be welcomed by educators who as a group represent a market potential sufficient to support such an effort. A strong leadership role should be taken by the federal level at this time to insure that any such development be in the best interests of the local educator and not rely exclusively on information provided by the producer. The project staff recommends that NIE pursue the development of a workable plan, one that includes provision for outside review of material or the reference to previously conducted outside reviews so as to insure the development of a file most responsive to educator needs. If this leadership role is neglected, a privately developed, machine readable resource base containing commercially produced educational materials undoubtedly will emerge. Without NIE participation, the emergence of such a system may prove to be inadequate from the perspective of the local educator.

The inclusion of commercially produced materials in a National Education Practices File is without question an extremely sensitive issue and may deserve an exploratory investigation for the delineation of alternatives as a subproject

of the Practices File. The mixed feelings of Practices File pilot test staff are reflected in the evaluation (Product 2.7).

> NOTE: The full documentation of the efforts to gain cooperation from the Association of American Publishers is a questionable use of both writer and reader time. That exploration was initiated in June, 1978, included another meeting in August, 1978, and a final meeting in June, 1979 with the School Division Committee at which the decision was made not to take any association-wide effort but simply to make information known (through a monthly Newsletter) to member houses and allow them to pursue their interest in the Practices File on their own. This awareness effort was implemented in the School Divisions October, 1978 issue of Intercom (an AAP newsletter) and the project has received three inquiries from individual publishers as of this writing (Random House, Benefic Press, and McGraw-Hill).
>
> In short, cooperation, commitment, and communications are lacking on the part of the Association to facilitate the development of an efficient means for making commercially produced practice information a part of the Practices File effort.

1.3 GENERAL RECOMMENDATIONS

The above discussion indicates several recommendations related to specific content/acquisition areas. The overall recommendation with regard to content/acquisitions is that a full-scale effort be undertaken with major federal and state program efforts to produce and collect practice information, and that those arrangements dictate the initial content thrust of the Practices File implementation. The underlying philosophy and specific action steps to accomplish this task are detailed in the Implementation and Management Plan (Product 2.4).

It should be noted that collaboration with major program offices for acquisitions does not result in the creation of a "Federal File". Many locally developed practices would be acquired throught such programs as Title IV-C, Teacher Centers, Teacher Corps, etc. and therefore the File would represent a mix of practices with regard to developmental level.

2.0 SELECTION

2.1 BACKGROUND

The selection feature of the Practices File is the area that received the most attention as a critical issue and one that shall undoubtedly be the subject of much debate in the future.

The issue of selection or "quality control" arose at the initial meeting of project staff with NIE staff in October, 1977. As a result of that meeting, NIE requested that a brief paper be prepared by the Project Director outlining the nature of the problem. Since the issue remains critical, major portions of that original paper are included here as background.

On October 26, 1977, BRS project staff met with NIE staff in Washington, D.C. to discuss the nature of the Practices File project and to discuss the future of specific contract activities. The issue of content selection was discussed at length. It was decided that the resolution of the issue rested primarily with the file designs suggested by the educational community. However, because of political, utility and cost-feasibility considerations, it was agreed that this issue potentially extends beyond the purview of the File development project and is lodged in a variety of philosophical points of view. The implications of adopting any one or a combination of one or more of the alternatives was not deemed appropriate. NIE staff felt that the implications and design considerations may in fact be the topic of a separate NIE study.

Content selection is viewed from two perspectives--whether or not a given educational practice shall be included in a National Education Practices File; and, providing information to potential users regarding the quality of content already included.

WHY MUST WE BE CONCERNED WITH CONTENT SELECTION?

It is unlikely that a fully implemented practice file will be able to accommodate the inclusion of all practices submitted or acquired for entry. This means that in the input phase, some systematic method of selection must be devised. This is a requirement of the RFP as a feature of the new file design.

The following questions illustrate the many issues related to selection:

- Is widespread applicability to educational settings the major criteria?
- What if a practice is widely applicable but not "deliverable"? (No documentation or staffing capability exists for practice exportation). Should capability to deliver be a selection criteria?
- For learner-oriented practices, should evaluation data measuring learner outcomes be considered in selecting file input?
- If widespread applicability, capability to deliver, and demonstrated learner outcomes are relevant, are they applied at the input side (as a selection device) or the output side (as a search capability)?

It is possible to devise a mechanism whereby existing validation criteria or evaluation outcomes, though not uniform, be included as a "searchable field" in the data base. This minimizes the "system concern" with the issue and allows user access to a wider array of alternatives.

Two previous conferences sponsored by NIE that relate to this issue were held in Los Angeles in 1974 (Increasing the Use of Promising Practices Information by Local Educational Agencies) and Washington, D.C. in 1975 (Invitational Conference on Exemplary Programs and Practices). Both of these conferences dealt with a broader issue, but both conference reports contained recommendations related to the selection issue:

(Los Angeles, 1974) The lack of consistency in the identification, nomination, validation and/or selection of promising practices is a major barrier to increased use, and is a primary source of frustration to everyone. The lack of standards that local educators, State Departments of Education, and Federal Agencies accept results in the identification of many programs which do not deserve recognition, while many others remain unrecognized and inaccessible.
(Washington, 1975) The conference participants consistently expressed the opinion that NIE needs to support research on what are effective validation processes and criteria. It was further felt that NIE should pursue an aggressive leadership role at the Federal level in securing adoption of more uniform and effective validation processes and criteria across all Federal programs.

Obviously, this is not a new issue. If the Practices File, however, is to be reflective of the best practices or allow a user to identify the best practices, it must be resolved and some national effort made to address those recommendations made several years ago.

It was decided that the issue of quality control lies outside the purview of the Practices File project. In addition, project staff were first to admit the futility of attempting to create a nationally accepted expression of practice quality along any defined continuum. Then as now, JDRP-approved is the most widely known quality control mechanism and its procedures are debated by many who hold differing conceptual and technical points of view.

In short, a modest file development effort funded by NIE cannot stretch of the imagination be expected to define, measure, or express practice quality in any way other than is currently accepted and practiced in the field. If resolution of this issue is to be addressed, it should be done by NIE in response to the recommendations made in 1974 and 1975 noted above.

NOTE: It should be noted that the experience of project staff would indicate that the concern about "quality control" is more in evidence at the State and Federal levels. Practitioners rarely express this concern, perhaps because they tend to modify practices they find to suit their own style and purposes --which would invalidate any qualitative measures. Rather, practitioners have expressed the preference for more information about the evaluation conducted and its findings (see Product 2.7).

2.2 PROCEDURE USED FOR THE TEST VERSION OF THE PRACTICES FILE

In an internal NIE memorandum dated April 11, 1977, authored by the project monitor and sent to the Acting Director of ICS, the selection issue was specifically addressed. That memo states:

> All practices will be eligible for inclusion. Evaluation techniques that have been applied to the practice will be identified according to type (e.g., case study, standardized test or peer review). But it will not be necessary for a practice to have been evaluated prior to inclusion in the file. Actual learner outcomes can be included as a distinct search field but they need not be entirely uniform and their inclusion is optional. (emphasis added)
>
> The project monitor also stated that, selection criteria will be patterned after those employed in the ERIC program (e.g., contribution to the field, legibility, likely utility to a national audience. (McAdams, 1977)

This direction from the project monitor was made in recognition of political reality, of educational evaluation state-of-the-art, and project outcome expectations.

This view of reality was further borne out by the project experience with Title IV-C projects. BRS staff assumed that "State Validation" was a term denoting a common procedure across states. Staff discovered that this clearly is not the case and that many states avoid the word "validated" using instead words such as "exemplary" or "promising", which connote (and probably denote) a less than formal evaluation procedure.

In accordance with the direction from NIE, the procedure for the test version of the Practices File was to cite any and all practice evaluation information provided. This information was cited in the "evaluation field" (EV) and will be discussed later. No attempt was made to convert data or any other expression of evaluative results in a uniform or standardized way. In those cases where no evaluative information was available, the field was left empty, nothing keyed, and it does not appear in the outline or offline print mode. Pilot test users subsequently indicated that if no evaluation data were available,

that that fact be so stated in the "EV" field. The identifier field (ID) was used to designate nationally validated, state validated, state developer and national developer programs so that users interested in practices with those "quality" designations could easily limit their output to those variables.

2.3 SCREENING RECOMMENDATIONS

In light of the foregoing discussion and the experience of the Practices File through the design and pilot test phases, the recommendations related to screening are as follows:

> NOTE: Assumes the acceptability of the Implemenation/Management Plan (Product 2.4) that outlines a national educational practice resource base coordination philosophy and the tasks to accomplish it with major Federal Programs.

A Practices File quality control process shall not be applicable for selecting practices to include in the File. The nature of the coordinated national practices resource base whould be comprehensive rather than selective. It is useful to educators at all levels to be aware of the practices being developed, maintained, or collected by major state and federal education programs.

It is also recommended that all criteria, whether federal (i.e., JDRP), state (i.e., state validation), or local (selection process operable for local/regional practice resource base development), be cited on the File format and available throught the Practices File management and that the "source of data" (SB)

field of the Practices File entry record be the means for determining what program, agency, political or geographic entity, submitted the practice for entry in the File. This referrent point and the availability of known criteria for each source makes that source accountable for quality control questions, should they arise.

These recommendations place the information management, delivery, and maintenance responsibilities on the Practices File management and fixes the responsibility for quality control on the producer or source of the information being managed by the Practices File. It is a shared responsibility as it should be, since each state and federal program is responsible for quality and must justify itself to the appropriate authorities for continued or additional funding appropriations.

This shared quality control mechanism for the Practices File simply reflects reality and does not pretend to create a qualitative national norm for educational practice information.

Though this procedure does not create a qualitative norm, the participation of a variety of programs, each with differing levels of practice documentation procedures, should positively influence the quantity and quality of practice documentation undertaken in the future. This improved documentation is a prerequisite to validation and is the core of quality control.

3.0 PROCESSING

3.1 BACKGROUND DISCUSSION

Processing procedures were discussed in length in Phase I documentation. Product 1.6, which is appended to the Revised Phase II Plan for the National Education Practices File Development Project (ED 167 104), documents and summarizes all prior Phase I deliberations regarding processing procedures for use with the pilot test content.

3.2 PILOT TEST FILE PROCESSING PROCEDURES

The following is an operational outline of the procedures for processing Practices File entries.

3.2.0.1 RECEIVE PRACTICE DESCRIPTIONS

3.2.0.2 CHECK OF "ON ORDER FILE"

All practice descriptions received are first checked against an "On Order File" to see if they represent an outstanding request made by the Project for a practice description. If they are an outstanding request, their receipt is noted. All practice descriptions are registered on a source card (green) which notes title and/or subtitle, source of practice, publication date, contact address, phone number and date of receipt. (See Table I)

TABLE I

SOURCE CARD - green

BOOK TITLE
Subtitle if given
Address/telephone - if "prepared by" is given, note name with other information
Publication date of book Date Received

3.2.0.3 CHECK FOR DUPLICATION

All practice descriptions are checked against the master title listing, online, or the title card file, manually, to make sure they are not already in the file.

3.2.0.4 ACCESSIONING

Each practice description is assigned a unique six-digit accession number preceded by the letters - PF. Example: PF000069. These numbers are assigned in ascending order and are then entered in an accession log. Practices consisting of several separate parts or volumes are assigned consecutive numbers to keep them together throughout processing and announcement. When an accession number is assigned, a title card (pink) and a numerical card (yellow) also are completed, (see Table II). These cards contain title, accession number, source of information, date of publication and origin page of practice description within a document. These cards provide tools for cross-referencing.

TABLE II

TITLE CARD - pink

PROJECT TITLE	Accession Number
Subtitle if given	
Source of information	
Publication date of book	Origin page

TABLE II - continued

NUMERICAL FILE CARD - yellow

PROJECT TITLE	Accession Number
Subtitle if given	
Source of information	
Publication date of book	Origin page

3.2.0.5 CHECK OF EXTERNAL FORM COMPLETENESS

A check is made to see if the practice description received has the necessary data to complete the citation elements of the file. If certain necessary data is incomplete, the source or developer is contacted to obtain the additional information needed. Each practice description is not required to have all citation elements. If not enough data is obtained to make the citation meaningful, the practice description is not included in the file (supporting the notion of improved practice documentation). A notation is made on the description to that effect and it is retained in an incomplete documentation file. Table III is a key to the citation elements/paragraphs available for each practice description.

TABLE III

KEY TO EDUCATION PRACTICES FILE CITATION ELEMENTS

(as displayed online)

Element/Paragraph Label	Content
AN	Accession Number
AU	Author
TI	Title
TL	Title Annotation
MJ	Major Descriptors
MN	Minor Descriptors
ID	Identifiers
AB	Program Description or Abstract
EV	Evaluation Information
AV	Availability, access to more information
CP	Contact Person
IN	Institution
GS	Geographic Source
FS	Source of Funding
CD	Last date data was verified
PD	Date practice was begun
NT	Notes
SB	Source of data
SP	Sponsoring Agency
SO	Journal Citation

3.2.0.6 INTERNAL DATA PROVISION

The data elements are then entered on an "Internal Data Transfer Form" (see Table IV). Each data element is reviewed and edited to meet keying standards and fit into allotted paragraph spaces. Several paragraphs, i.e., MJ, MN, ID, TL are supplied by the indexer, if they are not already on the source document. The standards on cataloging, indexing and abstracting as set forth in the ERIC Processing Manual are followed. The Thesaurus of ERIC Descriptors is used for the selection of descriptors. If the practice description does not include enough descriptors to allow for easy retrieval, additional descriptors may be included, up to the number allowed by ERIC indexing rules. Some editing of the abstract may also be done, if it is too lengthy. Pilot test evaluation results indicate that particular attention should be paid to editing NDN practice descriptions to eliminate redundancy and to shorten the overall length of these entries if at all possible.

TABLE IV

NATIONAL FILE OF EDUCATIONAL PRACTICES
INTERNAL DATA TRANSFER FORM OF 3/05/79

General Usage

REVIEWED BY:
DATE:

CLEARINGHOUSE ACCESSION NUMBER: AN.....

DATE OF DATA: CD.....

SOURCE OF DATA: SB.....

DATE PRACTICE BEGUN: PD.....

FUNDING SOURCE: (circle or fill in) SN.....

ESEA TITLE III; ESEA TITLE IV-C; LOCAL; if other specify, if none leave blank.

TITLE: TI.....

TITLE ANNOTATION OR FABRICATED TITLE:

JOURNAL CITATION: SO.....

CONTACT PERSON: CP.....

NAME:

TITLE:

ORGANIZATION:

STREET:

CITY, STATE, ZIP:

(punctuate lines, e.g.,
Sandy Williams or
Tom Jones;
Willowbrook School;
50 Foxhunt Road;
Osborne Hollow, N.Y. 00001)

PHONE NUMBER: PH.....

GEOGRAPHIC SOURCE (use postal abbrev. e.g., NY, MN): GS.....

AUTHOR (for documents): AU.....

TABLE IV - continued

INTERNAL DATA TRANSFER FORM of 3/05/79

INSTITUTION (enter name, city and state): IN.....

SPONSORING AGENCY NAME (if other than organization or institution): SP.....

DESCRIPTORS (* for up to 5 majors): DE.....

IDENTIFIERS: ID.....Indicate whether: State Validated, Nationally Validated, State Demonstrator, National Demonstrator, or State Developer.

NOTES (related materials, ERIC cross reference, etc.): NT.....

AVAILABILITY (services available to inquirers): AV.....

EVALUATION: NATIONAL or STATE and procedure used. EV.....

LANGUAGE (if not English) LG.....

ABSTRACT. (attach sheet as necessary) AB.....

3.2.0.7 DATA ELEMENT/PARAGRAPH GUIDELINES

The guidelines for each paragraph are outlined below (Section 3.2.0.8), with examples taken from the two sample citations at the end of this section. For each paragraph the following aspects are discussed. The "format" gives an explanation of the information contained in the paragraph and an example. Most examples are taken from the sample citations. The "technical" section states the requirements for the entry of the data and any limitations which may apply. The "discussion" gives further information on the data element. "User function" is what the searcher can do with that paragraph online (i.e., search, limit, display).

3.2.0.8 PARAGRAPH REQUIREMENTS/FORMAT AND TECHNICAL

ACCESSION NUMBER (AN)

Format - Example: PF000069

Technical - This number is searchable, always six digits, leading places are zero filled.

Discussion - Practice descriptions are numbered from 1 to N, but not all numbers are in the online file. The two letter prefix PF has been added to the accession number to indicate it is part of the practice file.

User Function - Search

AUTHOR (AU)

Format - See ERIC Manual, Section 5 for procedures.

Example: Arnold, Maile

Technical - Limit to less than 120 characters, not more than two authors to be listed.

Discussion - This field follows ERIC format exactly. Author names are unbound.

User Function - Search

TITLE (Ti)

Format - Title entered as given by source. Any former names are added in parentheses, i.e., Title (Formerly: XXXXX), where XXXXX is the former title. An extra title card is filled out for filing under the former title to cross reference this description. Example: Basic Skills in Reading (BASK).

Technical - Limit to 400 characters, searchable. Note: Use parentheses, not brackets, because not all printers can reproduce brackets.

Discussion - Some titles are very obscure, i.e., Project NICE. A descriptive title is created and entered in the Title Annotation (see next paragraph).

User Function - Search

TITLE ANNOTATION (TL)

Format - Open text description of a title which is not entirely clear. Example: annotation: An exemplary project intended to provide special instruction in the basic skills necessary for reading success.

Technical - Limit to 400 characters, searchable. The data is entered so that this can be a separate paragraph or be combined with the title.

Discussion - Some projects have very uninformative titles, therefore, this field is created to allow the entry of an annotated title.

User Function - Search

DESCRIPTORS (MJ, MN)

Format - Major descriptors are preceded by an asterisk (*) with no space between the * and the word. All descriptors are separated by a semi-colon. Rules of assigning descriptors are the same as ERIC. Example: *Reading-Instruction; Basic-Skills.

Technical - A semi-colon is required to separate descriptors. Without them the computer does not detect the end of one descriptor and the start of the next. Maximum 500 characters.

Discussion - Descriptors are selected and added by the indexer. If terms are supplied by the source they must be reviewed for consistency.

User Function - Search

IDENTIFIERS (ID)

Format - Identifiers are listed, separated by commas. No major/minor distinction is made. Example: Nationally Validated.

Technical - Free text searchable field. Maximum 180 characters.

Discussion - The following identifiers have been used: Developer, State Validated, State Demonstrator, Nationally Validated, National Demonstrator. Other identifiers may be used in the ERIC manner. ERIC usage includes entry of federal legislative fund source.

User Function - Search

PROGRAM DESCRIPTION OR ABSTRACT (AB)

Format - One or more paragraphs of narrative which includes description of purpose, techniques and target audience (see sample citation).

Technical - Online system has a maximum limit of 3,500 characters including blanks. Punctuation is not text edited out.

Discussion - If there is no microfiche or hard copy back-up documentation readily available, as much information as possible is included here for user evaluation of usefulness of the project in a particular situation. An effort is made to keep the abstract to 3,000 characters or about 600 words. Very long abstracts may be condensed by indexer.

User Function - Search

EVALUATION INFORMATION (EV)

Format - Evaluation data or reports are entered here if given.
Example: Students participating in the program demonstrated a 1.5 GL achievement gain compared to a .75 gain of the control group.

Technical - Limited to 600 characters.

Discussion - The purpose is to indicate the kind of evaluation (formal or informal) that practices have whether they are a national, state or local. State validation or other formal support or endorsement are labeled. In addition, the appropriate Identifier is also used. What the source has stated is the documentation included. Financial requirements, assurances and claims, and approval date are included within this paragraph for NDN programs. If no evaluation has been undertaken, that fact should be so stated here.

User Function - Search

AVAILABILITY (AV)

Format - Open narrative paragraph. Example: Services-available: no special network funding....etc.

Technical - Limit is set at 1,000 characters

Discussion - This field describes what services or training are available to interested persons and how to obtain them. Access to people or documents is described here.

User Function - Search

CONTACT PERSON (CP)

Format - Entered as for a mailing label. Lines should be punctuated the same as done in paragraph style. Example: Marjorie H. Benz, Title I Coordinator; Manchester Public Schools; 88 Lowel St.; Manchester, NH 03104

Technical - Up to six lines with no more than 40 characters per line.

Discussion - Provides mailing address for source of additional project information for both user and file maintenance staff.

PHONE NUMBER (PH) - Included in above paragraph

Format - Up to 60 characters. Preferred is (area code) - phone number. Example: (603) 668-8882. There is space for two numbers and extensions.

Technical - Up to 60 alpha numeric characters

Discussion - This field is to be used for the phone number of the person named in the contact paragraph. Where mail is to one person

and calls to another, place phone number in availability paragraph with appropriate name.

User Function - Display

INSTITUTION (IN)

Format - Institution name, city, state. Example: Manchester Public Schools, Manchester, NH.

Technical - Character limit 200.

Discussion - The need for this field should be considered carefully. In ERIC the institution is the place the author is associated with or represents. In cases where there is no personal author, this paragraph takes its place. Most practices have a contact person, place of employment, a broader governing agency (i.e., school district), and generally a funding agency or fund source administering agency. Contact person, name, address and phone are what the user needs. Usually the institution field is redundant.

User Function - Search

GEOGRAPHIC SOURCE (GS)

Format - Full state name.

Discussion - This field is newly added by ERIC to eliminate the use of the Identifier field to indicate state of origin of practice.

User Function - Search

FUNDING SOURCE (FS), Formerly SN

Format - Federal funds are entered in this format: ESEA Title IV-C or ESEA Title III or P.L. 89-142. State and local funds are written out up to 120 characters. Federal fund source other than the ESEA groups have the title spelled out, i.e., LEAA, Law Enforcement Assistance Administration. Example: Developmental Funding: USOE ESEA Title I.

Technical - Maximum 120 characters. During the pilot test, the field was input with SN as its label and converted to FS by the load program.

Discussion - Accuracy of format for the ESEA title project is important for good retrieval. This field carries names of legislation or grants and not an administrative or sponsoring agency name, which should go into the SP paragraph. As the File expands, a single authority listing of fund sources most be developed.

User Function - Search

DATE OF DATA (CD)

Format - 1978 or 5 JUL 78 or JUL78 or FALL 78.

Technical - This date field must have the year as its last two characters. Variable length, up to 15 characters is allowed. Leave space between word and number.

Discussion - This paragraph is to advise the user and the file administrators of the most recent date when the accuracy of the data was checked and/or updated. When data is updated, new date will be added.

User Function - Search

DATE PRACTICE BEGAN (PD)

Format - SEP 75 or 11 SEP 75 or 1975 or FALL 79, EST 79

Technical - Last two digits are to be the year to permit limiting a search to specific years. Maximum of 15 characters.

Discussion - This element is to provide the user with an indication of the date the project began. If the date is estimated, it is indicated by "EST" followed by the date.

User Function - Limit

NOTES (NT)

Format - Format is open and is used to indicate cross references, number of microfiche, pages, etc. Example: ERIC ED 099197

Technical - No specific restrictions other than size of 500 characters.

Discussion - Usage is same as ERIC.

User Function - Search

SOURCE OF DATA (SB)

Format - Open. Example: From USOE NDN Catalogue.

Technical - Searchable field, up to 200 characters.

Discussion - This field is to indicate where a practice file description was obtained. In many cases the source is a State Department of Education. It is not necessary to enter the full title of the source document. For a given source, the entry must be consistent on all practice descriptions.

User Function - Search

SPONSORING AGENCY (SP)

Format - Same as ERIC. Example: Human Environment Institute, Boston University.

Technical - 120 character maximum

Discussion - This field is used for sponsors who are not also fund sources. For example, a project at Berkley High School funded by ESEA Title IX and sponsored by UCLA would have UCLA as the sponsor.

User Function - Search

JOURNAL CITATION (SO)

Format - ERIC format for entry of journal source.

Technical - Maximum of 180 characters

Discussion - This paragraph is to cite journal articles as ERIC does. The paragraph label SO was chosen because that is the BRS ERIC label for that paragraph.

User Function - Display

TODAY'S DATE (AD) - Not included in online display

Format - Numbers tell the date the record is typed into magnetic format. Example: 5 5 75 means May 5, 1975. Type in numbers with spaces between month, day and year.

Technical - The ERIC equivalent is the Add Date, the date the data is added to the file.

Discussion - While there is very little need for this now, in the future this may be valuable for sorting.

3.2.0.9 DATA INPUT PROCEDURES

The information on the Internal Data Transfer Form having been entered following the technical and format guidelines, is now entered on a micro computer system with text editing software for the creation and maintenance of data bases. A CRT (cathode ray tube) is used for input interfaced with a printer capable of producing camera-ready copy for proofing, if online proofing is not desired. A data form is developed by the programmer which provides a formatted screen for the entry of the data to the micro computer.

3.2.10 PRACTICE DESCRIPTION RETRIEVAL AND REVIEW

After a description has been entered, the form name and accession number will recall to the screen (on the micro computer) the practice description for review and/or editing. Corrections and/or additions/deletions are made at this time with text editing capability.

3.2.11 TRANSMITTING

3.2.12 LOADING

NOTE: These two operations are specific to the BRS proprietary software but comparable steps are required and available through other vendors.

The BRS process of transmitting moved the Practices File data directly from the micro computer to an Online Data Collection Library (ODCL). The process of loading moved the data from the ODCL to an online file and accomplished all of the required file inversions for user searching.

SAMPLE I

AN PF000069.
TI BASIC SKILLS IN READING (BASK).
TL AN EXEMPLARY PROJECT INTENDED TO PROVIDE SPECIAL INSTRUCTION IN THE BASIC SKILLS NECESSARY FOR READING SUCCESS.
MJ PERFORMANCE-BASED-EDUCATION. DIAGNOSTIC-TEACHING. ELEMENTARY-EDUCATION. READING-INSTRUCTION. REMEDIAL-READING-PROGRAMS.
MN PROGRAM-DESCRIPTIONS. BASIC-SKILLS. SMALL-GROUP-INSTRUCTION. INDIVIDUALIZED-INSTRUCTION. RESOURCE-ROOM-PROGRAMS. GROUPING-INSTRUCTIONAL-PURPOSES.
ID NATIONALLY VALIDATED.
AB TARGET-AUDIENCE: READERS SCORING BELOW THE FORTIETH PERCENTILE ON GATES-MACGINITIE SURVEY, GRADES 1-6. DESCRIPTION: BASK IS AN ADOPTABLE/ADAPTABLE PROGRAM THAT CAN BE USED IN SEVERAL WAYS TO UPGRADE READING SKILLS THROUGHOUT THE ELEMENTARY/MIDDLE SCHOOL YEARS. TARGET PUPILS ARE REMEDIAL, BUT THE FORMAT CAN BE APPLIED TO ALL LEVELS (REVISED OBJECTIVES ARE AVAILABLE). ITS PRINCIPLES AND MANY OF ITS MATERIALS AND TECHNIQUES CAN ALSO BE USED TO ADVANTAGE FOR UNDER-PAR JUNIOR AND SENIOR HIGH PUPILS. IT IS A PULL-OUT PROJECT, USING A CRITERION-REFERENCED FORMAT AND INCLUDING INDIVIDUALIZED DIAGNOSIS, PRESCRIPTION, AND INSTRUCTION. THE BASK CURRICULUM IS TARGETED TO BASIC READING SKILLS--READINESS, PHONICS, STRUCTURAL ANALYSIS, COMPREHENSION, AND STUDY REFERENCE SKILLS. EACH CHILD IN THE PROGRAM RECEIVES 150 MINUTES OF INSTRUCTION WEEKLY (30 MINUTES DAILY), WORKING IN SMALL GROUPS OR ON A ONE-TO-ONE BASIS. THE HEART OF THE PROJECT IS THE INDIVIDUALIZED SMALL-GROUP INSTRUCTION GIVEN DAILY IN THE CHILD'S FAMILIAR CLASSROOM SETTING. FREQUENT DIAGNOSIS AND FLEXIBLE PRESCRIPTIVE TEACHING INSURE PUPILS' EXPERIENCE OF SUCCESS. PUPILS EVIDENCING POSSIBLE LEARNING DISABILITIES ARE REFERRED FOR TESTING AND PROGRAMMING, IF NEEDED. COMPUTERIZED INFORMATION RETRIEVAL IS USED FOR DIAGNOSIS, PRESCRIPTION, AND RECORD KEEPING; THE COMPUTER ALSO PROCESSES PROGRESS REPORTS FOR PARENTS AND SCHOOL STAFF. THE PROJECT IS DESIGNED ALSO FOR MANUAL RECORD KEEPING AND DATA PROCESSING.
EV IMPLEMENTATION-REQUIREMENTS: (1) ADOPTER DISTRICT'S FIRM COMMITMENT TO THE USE OF BASK. (2) ASSURANCE THAT THE NECESSARY TRAINING WILL BE PROVIDED AND SUPPORTIVE STAFF ASSIGNED TO CONCENTRATE ON THE PROJECT. FINANCIAL-REQUIREMENTS: APPROXIMATELY 65% OF MATERIALS USED CAN BE MADE FROM MATERIALS AVAILABLE AT THE BASK RESOURCE CENTER. COMMERCIALLY AVAILABLE MATERIALS MAKE UP THE REMAINDER. PROJECTED COST PER PUPIL IN 1978, $401.20. ASSURANCES/CLAIMS: 75-68. APPROVED: 9/11/75. FOR FISCAL YEAR 1974, THE PROGRAM ANTICIPATED THAT 65% OF STUDENTS SERVED WOULD MAKE GAINS OF ONE MONTH PER MONTH. 84% ACTUALLY DID SO. IN 1975 AND 1976, 80.6% AND 80% (RESPECTIVELY) REACHED THAT GOAL.
AV SERVICES-AVAILABLE: NO SPECIAL NETWORK FUNDING SUPPORTS THIS PROJECT'S DISSEMINATION EFFORTS. AWARENESS MATERIALS ARE AVAILABLE. VISITORS ARE WELCOME BY APPOINTMENT. TRAINING (A WORKSHOP OF FROM THREE TO FIVE DAYS' DURATION) IS CONDUCTED AT THE PROJECT SITE (ADOPTER MUST COVER ALL COSTS). TRAINING IS CONDUCTED OUT-OF-STATE (EXEMPLARY PROJECT STAFF COSTS MUST BE PAID). PROJECT STAFF CAN ATTEND OUT-OF-STATE AWARENESS CONFERENCES (EXPENSES MUST BE PAID). ADAPTION ASSISTANCE, FOLLOW-UP VISITS, AND TELEPHONE CONSULTATION SERVICES ARE AVAILABLE.

SAMPLE I - continued

OP MARJORIE H. BENZ, TITLE I COORDINATOR; MANCHESTER PUBLIC SCHOOLS;
88 LOWELL ST. MANCHESTER, NH 03104. PHONE: (603) 668-8882.
IN MANCHESTER PUBLIC SCHOOLS, MANCHESTER, NH.
GS NEW HAMPSHIRE.
FS DEVELOPMENTAL FUNDING: USOE ESEA TITLE I.
CD FALL 1978.
[illegible]D 11 SEPT 75.
SB FROM USOE NDN CATALOG.

NOTE: This sample is all upper case. Abstracts printed out from the computer can be upper and lower case.

3.3 PROCESSING RECOMMENDATIONS

Little difficulty was found with the processing procedures used during the pilot test. Since only about 2,100 items were processed for the pilot test, further experience might yield specific procedural changes when high-volume processing is involved.

At present, it is recommended that the procedures be treated as guidelines and that a flexibility for change be maintained as the Practices File moves through the initial stages of full implementation and the needs of the cooperating program offices more clearly defined.

4.0 VOCABULARY DEVELOPMENT AND MAINTENANCE

4.1 BACKGROUND DISCUSSION

Throughout the design phase and as part of the plan for the pilot test, the ERIC Thesaurus was used as the basis for the Practices File controlled vocabulary.

4.2 THE CONTROLLED VOCABULARY DURING THE PILOT TEST

A descriptor posting has been prepared for the pilot test file and is available as a companion to this document. Only ERIC Thesaurus terms were used.

4.3 RECOMMENDATIONS

It is recommended that the ERIC Thesaurus continue to be the base source of descriptor indexing terms, but that a flexible and expedient policy for adding new terms be adopted for application with the Practices File. This policy should allow for the monthly addition and use of new terms.

The addition of new terms need not be a serious issue since descriptor listings (and postings) can quickly be generated and made available to all users of the File and free text searching is a capability of all major online service vendors.

5.0 RESOURCE BASE MAINTENANCE

5.1 BACKGROUND DISCUSSION

During the design phase it was made clear by a large majority of educators interviewed that the Practices File design specifications must include the provision for updating records. To do this would entail a design and operational distinction between the Practices File and all other current educational data bases being used on a national scale.

This design feature also requires that the file updating be operated centrally, if users are to benefit from the record update process. From this central updating facility, tapes indicating adds, deletes and changes to specific information fields could be distributed. Those who purchase tapes must agree to monthly file and record updating in order to protect the validity of the highly transient infromation.

The record updating capability is viewed as critical since a major portion of the Practices File (75%) is nondocument based (referral) and, is supported by data concerning the NDN portion of the file collected during the pilot test.

5.2 RECORD UPDATING DURING THE PILOT TEST

Since interest in the NDN (JKRP-Approved Projects) portion of the test file was and remains high, project staff selected that information as a test of the update capability and procedures.

Arrangements were made with the Far West Laboratory to receive all NDN project update information on a monthly basis. This was accomplished through a review of the "NDN ED", including the "Red Pencil Time" section which lists any changes in NDN program description (new addresses, phone number, etc.).

From October, 1978 to August, 1979, 53 of the 208 NDN records required changes and those changes maifested themselves in revised information in a total of 111 information paragraphs (some changes required the updating of

information in more than two paragraphs). Of the 53 record updates affected, 47 related to the "Availability" or "Contact Person" paragraphs. This is important since those paragraphs contain the critical information for referral purposes (the key for "educator to educator" communications).

In short, during an eleven-month period, information in 25% of the NDN records required revisions of critical importance to the ultimate user. All changes were made on these records through September, 1979, as a pilot test of this capability. This procedure facilitated by the Far West Laboratory worked well and should be explored as a model for other agencies.

The NDN portion of the Practices File is probably one of the most stable of resource files since it contains rigorously evaluated, formal, well-documented and well-publicized practices. Thus, the annual update rate for NDN of 28% may be small in comparison to other, less formalized programs. An annual update rate of 35% to 50% should be projected for the less well organized data bases such as those of Title IV-C or other state or regional efforts to collect educational practice information. This underscores the importance of this feature to a practitioner-oriented Practices File design.

5.3 RECOMMENDATIONS

Based on the experience of the pilot test that demonstrates the high degree of transciency inherent to educational practice information (in critical information fields), it is recommended that a monthly updating procedure be developed with all cooperating (for acquisitions purposes) programs/organizations submitting practice information. Updating should initially be accomplished on the online file no less than quarterly. If experience demonstrates that quarterly is not sufficient, the monthly procedure can be fully implemented to include online record updates. It must be remembered that the actual update requirements will be spelled out by the cooperating programs since they will have thier own motivation for maintaining credible information about their practices.

The technical procedure followed for updating the online records will vary with each vendor. At BRS, Inc., the capability to enter and update in a "real time" situation will be available in approximately one year. That capability will allow online entry of update information and immediate searching capability against the records updated which reflect the new information. At present, the procedure for record updating is a periodic (depending on record update schedule) purge, reload, and merging of records affected by update information. This is easily accomplished in a 24-hour period and has presented no problems related to the Practices File.

With regard to the editorial process inherent to data entry, it is recommended that during Phase III, a software program and appropriate documentation be prepared that accomplishes the data verification routines similar to the current "LIDS" package use by ERIC.

With regard to abstracting and indexing, this should be accomplished centrally. Even though many programs will submit fully completed abstracts, these should be edited centrally and new abstracts created centrally for those practices for which no abstracts were previously prepared.

6.0 SOURCE AVAILABILITY

6.1 BACKGROUND DISCUSSION

The Internal Project Advisory Group and the Project Monitor (memo dated April 11, 1977) recommended that items without source documentation be considered for inclusion during the pilot test. This direction was endorsed fully by the Practices File project staff since to require hard copy source documentation would define educational practice as that which is established only in print. This obviously is not the case since a variety of non-printed media formats are used by practicing educators.

The agreement on this issue by all concerned with the Practices File is the basis for the design differences discussed in Phase I documentation (Product 1.4/1.5) which outlines the advantages of a "source-based system" as compared to a "referral-based system". The early decision to include items representing both systems (some document-based entries and some referral-based entries) appears to be one that reflects most adequately the reality of educational practice.

The cost implications of a system designed to provide direct nationwide access to print and non-print practice information makes such a consideration out of the question. For example, the non-print material would have to be collected by a national center, where requests for them would be received and processed. Taking into consideration the number and cost of non-print materials for which user access would have to be provided, the budget for this would be prohibitive. Also, since a "loan cycle" of one week to the user would require an additional two weeks for mailing and internal processing. This would mean that during the typical forty-week school year, only ten to thirteen educators per school year (nationwide) would have access to a particular document or material. The solution to this would be acquisition of additional copies for the

central location or the creation of numerous regional locations, both of which would multiply the already prohibitive budget several times.

6.2 SOURCE AVAILABILITY DURING THE PILOT TEST

The SMERC materials best represent the traditional approach to the provision of source materials during the pilot test. They are available on microfiche and users were referred to SMERC for those source documents. The remainder of the Practices File (about 1,600) records were handled on a referral basis wherein users were referred directly to the "provider". Little or no negative feedback from users or intermediaries regarding this practice was received during the pilot test. In fact, during the short pilot test, one site reported 70% success acquiring source materials through contact persons. Even though this success was evident, the responsibility of contact persons must be made clear to cooperating programs to avoid problems in the future.

6.3 RECOMMENDATIONS REGARDING FUTURE SOURCE AVAILABILITY

The implementation/management document (Product 2.4) specifically addresses future approaches to source availability. However, to summarize that fuller recommendation, the design proposed for the future involves collaborative relationships with a number of OE and NIE formal programs. Since these formal programs already provide for the delivery of materials in all formats as well as (in some cases) the training required to use them, the very nature of the collaboration provides delivery within a context that goes beyond mere "source availability". This is an important distinction, since previous references to "source" typically related to print materials. In this case, the recommendation for the future of the Practices File embodies a definition of source that is far

more generic and includes human sources, organizational sources, and programmatic sources with delivery capability. The delivery may be of print materials, non-print materials, negotiated and tailored presentations and pre- or inservice training. In short, within the context of educational problem-solving or school staff and practice improvement efforts, the delivery of a printed material is a low priority given the far greater potential that exists among the "sources" of educational practice.

It is recommended that in those cases when formal print documentation does exist, that it be made available on microfiche through a separate Practices File collection, as part of the ERIC collection, or by referral to the microfiche producer (i.e., SMERC) if producers are agreeable to such an arrangement.

In those cases where the practice entry is entirely referral, the contact persons must be made fully aware of this responsibility to respond to File users. This should be done through the program offices and assurances made that contact persons will accept the responsibility.

7.0 SEARCH AND RETRIEVAL SYSTEM

7.1 BACKGROUND

The Phase I documentation did not project any search and retrieval system modifications and the pilot test experience supported that earlier projection. It is apparent that commercially available systems delivered by BRS and the other two major vendors of online services do provide more than adequate search and retrieval capability.

7.2 THE SEARCH SYSTEM USED FOR THE PILOT TEST

Appendix A describes and illustrates some of the key BRS system capabilities used with the Practices File during the pilot test.

Some pilot test sites did have difficulty changing from one search system to another but that in no way reflects on the Practices File design. Many of the "system" suggestions in the evaluation report are already BRS system capabilities, thus reflecting the inexperience of some users with the BRS system.

7.3 RECOMMENDATIONS FOR THE FUTURE SYSTEM

In addition to the search system, it is recommended that two basic telecommunications capabilities be made a part of the future Practices File design and operations. The first capability is "electronic mail" that allows terminals on the system to communicate directly with one or more other nodes. This capability would support the communications of the cooperating programs/ agencies recommended as integral components of the future design.

The second capability is a "teleconferencing" or "bulletin board" feature that allows real time display and entry of items (or responses to items) by any

node on the system. This could be an invaluable aid in creating a cooperative effort across the programs/agencies collaborating on the operation and maintenance of the future Practices File. For instance, Title IV-C State Directors might want to engage in a teleconferencing session prior to a national Title IV-C conference for planning purposes, agenda formulation, or the development of policy statements to be issued at the conference.

Both of these capabilities can be used by Practices File management and/or individual programs and agencies for regular reporting purposes, thus enabling immediate creation of weekly or monthly reports for general or specific purposes.

8.0 USER PRODUCTS/SERVICES

8.1 BACKGROUND

The nature of the content announcement user products recommended during Phase I (Product 1.6) are "SDI-oriented" rather than "monthly catalog-oriented." It was felt that, since the Practices File is to be related to the needs of the practitioner, the typical "monthly catalog" announcing all file entries would be costly. Also, since records in the file are to be routinely updated, a a catalog would be outdated very quickly making expenditure of large sums of money for such publications very questionable.

With regard to user services, the Phase I documentation called for a significant commitment to user training and follow-up services.

8.2 PILOT TEST USER PRODUCTS AND SERVICES

The content announcement user products developed during the pilot test reflect the SDI orientation. Two separate products were produced: a solely content-oriented announcement vehicle and a content and grade level-oriented product. The content announcement user products have been named Informex.

The user services during the pilot test included a training/orientation session for all test site personnel held in April, 1979 at Louisville, Kentucky. Included as part of the training session was the distribution of a system and data base manual for each site. The session was evaluated and the results of that evaluation and the manual were submitted to NIE with the April, 1979 monthly report.

In addition to the training, users were provided with ongoing "user service" phone numbers. One number was to BRS (for search system questions and problems) and the other was to the Pilot Site Network Coordinator (for Practices

File content questions). A newsletter was also sent to all users by the Network Coordinator and copies of those were forwarded to NIE with the monthly reports.

8.3 USER PRODUCTS AND SERVICES FOR THE FUTURE PRACTICES FILE

The products and services provided during the pilot test should serve as prototypic of that which might be provided during full implementation of the Practices File. However, since the design for future full-scale implementation is one of multiple program/agency collaboration, the specific needs of those programs/agencies must be taken into account before final decisions regarding user products/services are made. In most cases, the programs/agencies have a responsibility for these services and may desire to use the Practices File as a mechanism for making those services more cost-effective. For instance, NDN or Title IV-C may want to continue the preparation and distribution of their respective program catalogs. However, to do so using a photocomposition tape created directly from the Practices File would be much more cost-effective and timely than current printing procedures.

Central management of the future Practices File should take these program needs into account and only develop unique products and services when they are nonduplicative and complementary to those required by the programs. For instance, since program responsibility will undoubtedly be focused on program content (i.e., NDN program - NDN catalog), the Practices File management may find a SDI-oriented announcement vehicle that represents an "information exchange" across programs extremely valuable as a practitioner product (hence the name Informex for the pilot test prototype user products). Practitioners are rarely concerned about the Federal or State program origin of given

practices therefore it can be projected that Informex would be a valuable product for the future Practices File.

Lastly, a selectively published content announcement mechanism could be done less frequently (and would be much smaller) than the typical monthly full catalogs. This would affect some cost savings and not deprive users of knowledge about the content since the participating programs would undoubtedly still publish their own catalogs for their own purposes.

9.0 ORGANIZATION FOR OPERATING THE PRACTICES FILE

Throughout Phase I of the project the question of the ultimate administrative organization of the File was left to be informed by the pilot test (Phase II). A full discussion of the organization proposed is contained in the Implementation/Management Plan (Product 2.4) which is a separate document also submitted to NIE with the Phase II final report materials.

To briefly summarize what is covered in Product 2.4, the recommended management plan is one that centers on a highly centralized coordination role demanded by the collaborative nature of the implementation plan. Several aspects of the operational Practices File would be decentralized to the cooperating programs, thereby changing the notion of the traditional "clearinghouse" from one focused on content-centered information processing to that of program responsibility including (now, and hopefully coordinated through the Practices File in the future) front-end components (acquisitions and selection) and some back-end elements (source availability and user products, services) of the information processing design of the Practices File.

In short, the Implementation/Management Plan (Product 2.4) proposes a federal-level capacity building effort to develop and maintain a comprehensive, real time, educational practice knowledge base in support of school and classroom improvement efforts.

10.0 COSTS FOR INFORMATION PROCESSING DURING THE PILOT TEST OF THE PRACTICES FILE

Because the project required a number of major functions which exceeded the operation of a traditional clearinghouse, the costs associated with all of Phase II are not applicable to information processing per se. Therefore, much the same as ERIC, when calculating "per document" costs, excludes ERIC central management costs, microfiche production and distribution costs, hardcopy printing costs for brochures and publications, and the inkind costs of users for publicity, training and service delivery, this cost analysis has been accomplished in a similar manner. Even though the exclusion of certain cost items relevant to the project were easily accomplished (e.g., selection, training and operation of the pilot test network and design-Phase II Objective 2, and collection and analysis of evaluative data-Phase II Objective 3), certain activities identified with specific individuals such as the Practices File Project Director, were difficult to assign. Since this is the case, the cost figures may be slightly inflated.

> NOTE: It was the intent of project staff involved in the information processing to keep a time log of all activities related specifically to the categories shown below. However, that procedure itself would have added to the costs and significantly reduced the productive person hours available to the project. Therefore, very shortly after the initiation of that procedure, the Project Director directed that it be discontinued.

Procedure for Calculating Costs

As mentioned earlier, excluding the costs for Phase II Objectives 2 and 3 is a relatively easy task since those objectives were submitted to NIE as separable items. The objective and associated costs for information processing are contained in Phase I, Objective 1, The Creation of the Pilot Test File. However, the budget items associated with that objective also contain all of the total project

management costs and items related to the Project Advisory Group, Internal Advisory Group, and total project applicability of certain other items such as supplies, duplicating/printing, phone, and postage. Therefore, shown below are the Phase II, Objective I budget item figures reduced to reflect the proportion calculated to be directly related to information processing. This is accomplished first in order to establish the total project funds committed for that purpose.

PHASE II

PROJECT FUNDS COMMITTED TO INFORMATION PROCESSING

STAFF	AMOUNT	PERCENTAGE OF PHASE II TOTAL
Project Director	$ 4,560	10%
BRS Staff	$ 228	3%
Clearinghouse Director	$24,696	90% *
Abstractor	$ 9,000	90% *
Secretary	$ 1,260	10%
Consultant	---	0%
Sub Total	$39,744	*10% spent in procedural design

Travel

Only $1,100 can be directly related to information processing.

Computer Time	$9,900	90%
Supplies	$ 180	10%
Duplicating/Printing	$ 270	15%
Phone	$ 540	15%
Postage	$ 180	10%
Sub Total	$50,814	
Applicable Indirect Labor	6,160	
Applicable Overhead	21,194	
GRAND TOTAL	$78,168	

The total of $78,168 represents, as accurately as possible, the expenditures for information processing from which the figures below have been derived for comparison to other system operational expenditures Since 2,100 documents were processed for the test version of the Practices File, a per document figure of $37.22 can readily be calculated. However, below is an attempt to break the total into processing categories consistent with those in general use.

Acquisitions

Total Cost	$11,725
Cost Per Document	$ 5.58

Cataloging

Total Cost	$ 7,816
Cost Per Document	$ 3.72

Abstracting/Indexing

Total Cost	$31,267
Cost Per Document	$ 14.88

Key Entry

Total Cost	$11,725
Cost Per Document	$ 5.58

Editing

Total Cost	$15,633
Cost Per Document	$ 7.44

The above figures yield the following percentages by operation:

Acquisitions:	15%
Cataloging:	10%
Abstracting/ Indexing:	40%
Key Entry:	15%
Editing:	20%

If the File were scheduled for semi-annual record updating, the cost per record updated would be approximately $8.00, assuming some protion of a record required modification. That figure is calculated using a portion of the per record editing figure, and adding procedural costs for updating (printing and mailing). That updating figure could be significantly reduced during full implementation of the Practices File if the cooperating programs/agency updating efforts were integrated with Practices File effort. If this were accomplished, a per record update cost might be much closer to $4.00 to $5.00.

The figure of $37 per record is very reasonable when compared to other systems which run approximately $60 to $70 per record. This savings is a manifestation of the collaborative acquisitions undertaken in this design as opposed to the traditional clearinghouse "seek and document" approach.

It should be kept in mind that this cost of $37 per record was achieved without the benefit of any formal arrangements with cooperating programs (other than NDN which represents only 10% of the test file). If the cooperating programs/agencies mentioned in Product 2.4 were to formally agree to the procedures outlined in that same document, it is projected that the per document cost could be reduced to near $20 and perhaps lower as the procedures were routinized and "internalized" by the various programs. This is so since the acquisitions costs would be reduced significantly.

In short, $37 is a low unit price for information processing when compared to the other data bases. Given 1) the legitimate projection for further reducing to per document costs, and 2) the overwhelming positive evaluation reported in Product 2.7, it would appear that the National Education Practices File Development Project undertaken by BRS has clearly answered the basic question of design and implementation feasibility for a file of this nature.

APPENDIX A

BRS SEARCH SYSTEM DESCRIPTION

The BRS Search System incorporates the best features of many online retrieval programs to provide searchers with one of the most advanced online searching systems currently available.

The BRS system combines sophisticated and flexible searching techniques with an easy-to-learn interactive language. It has all the standard searching features of other programs, as well as many unique capabilities not offered by other systems.

Most importantly, the BRS system is structured so that a user can sign on to the system, enter a complicated search strategy in a single step, retrieve results, and sign off with a *minimum of interaction*, a cost-effective approach to searching appreciated by all online system users.

The sample search sessions reproduced here illustrate the key features of the BRS Search System.

SEARCHING WITH STANDARD BOOLEAN LOGICAL OPERATORS

The system will automatically generate up to 999 set numbers for search term entry.

The BRS software permits total profiles to be entered against a single set number, rather than requiring the individual elements of the profile to be entered separately and then combined in a final set.

Standard AND, OR, and NOT operators are available, and users may use up to 5 level of logic *within* logic (nested expressions) in a single set.

OFFLINE PRINTING

Users may request that the results of their search be printed offline at the BRS Computer Center.

All offline results are printed the evening of entry and mailed to the user first class the following morning.

Users have the option of requesting that their offline prints be sorted alphabetcally by any field of the document, such as the author or journal title.

SAMPLE BRS SEARCH SESSIONS ILLUSTRATING KEY PROGRAM FEATURES

(user entry is in lower case; all system dialog is upper case)

ENTER BRS PASSWORD
XXXXXXXX ← *simple one-step sign on procedure*

SIGN ON IS COMPLETE 12/29/78 15:51:11 ← *system verifies date and time of day*

ENTER YES IF BROADCAST MESSAGE IS DESIRED: y ← *this message is* optional—*user may bypass by pressing CR*
NEWS FILE UPDATED 12/29/78
BRS SYSTEM DOWN ON JANUARY 2, 1979—HAPPY NEW YEAR!

ENTER DATABASE NAME info ← *user enters database label INFO (for the INFORM business file)*

BRS/INFO/NOV78 ← *system verifies database name and its currency online*

BRS-SEARCH MODE-ENTER QUERY
1: ..usage ← *user enters the unique ..USAGE command (note that all commands are prefaced with ..) asking for the level of system activity at this time; this is an* optional *feature.*
NORMAL

1: computers
RESULT 5878

2: crime or criminal or fraud ← *many terms can be "or-ed" in same set*
RESULT 1022

3: 1 and 2
RESULT 167

4: 3 and legislation ← *set numbers and words can be combined*
RESULT 12

5: computers and (crime or criminal or fraud) and legislation ← *all concepts of search can be entered in single set to save time.*
RESULT 12

6: ..print 5 bibl/doc=1 ← *user enters ..PRINT command to request online printing of documents:*
5 = set number to be printed
bibl = standard bibliographic elements (users may set their own defaults by database)

1
AU DENT, IKE.
TI LEGISLATION PROPOSED AGAINST COMPUTER FRAUD
SO CREDIT WORLD. V66N5. P. 11. FEB. 1978.
AB STRONG DETERRENTS ARE NEEDED TO PROTECT OUR ECONOMY'S VITAL INFORMATION SYSTEMS FROM ILLEGAL TAMPERING. PASSAGE OF PROPOSED LEGISLATION WOULD MAKE IT A FEDERAL CRIME TO ACCESS A COMPUTER FOR PURPOSES OF COMMITTING FRAUD OR OBTAINING MONEY, PROPERTY, OR SERVICES UNDER FALSE OR FRAUDULENT PRETENSES.

END OF DOCUMENT

..printoff 3 bibl/doc=all/id=smith,jt/sort=au ← *user enters ..PRINTOFF command to request offline output* sorted *by author.*
YOUR OFFLINE QUERY HAS BEEN SAVED UNDER THE NAME OF Q001 ← *system assigns unique No. that can be used later to display or cancel the offline if necessary.*

..off ← *user logs off the system and is given the connect time, time of day, and date.*
CONNECT TIME 0:02 HH:MM

THE "ROOT" FEATURE

There is a special operator called ROOT which asks the system to display for the user a list of all entries in the Dictionary File for a database that begin with a specified set of characters.

The ROOT display provides the user with clues for additional terms to use in a search or may remind the searcher of the terms that will result from the truncation of a word (see the discussion below).

TRUNCATION FEATURE

The truncation symbol ($) can be attached to any keyword stem to indicate to the system that all terms beginning with that word or stem are to be automatically included in the search statement.

Generalized truncation will search all terms from *all* fields of the documents, including titles and abstracts.

FREE-TEXT POSITIONAL SEARCHING

The BRS program permits the searcher in look directly in the text portions of documents for any words, numbers, or phrases and to specify the exact *positional* relationship of one term to another by the special free .text logical operators WITH and ADJ.

FIELD QUALIFICATION FEATURE

Unless otherwise specified by the user, the system will look for entry terms in *all* fields of a document. Yet when it is desirable, the user may easily *qualify* the term to a certain field(s) within a document.

Even more powerful is the unique BRS capability for "after the fact" qualification of entire search statements.

BRS-SEARCH MODE-ENTER QUERY

1: root computer

user asks to see all the terms in the database dictionary that begin with the stem COMPUTER

COMPUTER$	
COMPUTER	7575 DOCUMENTS
COMPUTER-AIDED-LEARNING	1 DOCUMENT
COMPUTER-AUDITS	81 DOCUMENTS
COMPUTER-BASED	3 DOCUMENTS
COMPUTERIZATION	162 DOCUMENTS
COMPUTERIZE	34 DOCUMENTS
COMPUTERIZED	930 DOCUMENTS
COMPUTERS	5878 DOCUMENTS

system will display all the terms that begin with COMPUTER (100 is the maximum number of variants that will be printed.

BRS-SEARCH MODE-ENTER QUERY

1: root fraud

FRAUD$	
FRAUD	491 DOCUMENTS
FRAUDLESS	1 DOCUMENT
FRAUDS	52 DOCUMENTS
FRAUDULENT	92 DOCUMENTS
FRAUDULENTLY	3 DOCUMENTS

system displays all the terms that begin with the stem FRAUD

1: computer$ ← *unrestricted truncation will search all terms beginning with COMPUTER*
RESULT 9325

2: computer$1 ← *user may restrict truncation by specifying number of characters to follow (this entry would search only computer and computers, not computerized, etc.*
RESULT 8252

3: crime$1 or criminal$1 or fraud$
RESULT 1155

4: 1 and 3
RESULT 249

5: computer$ and (crime$1 criminal$1 fraud$) ← *all terms in the search may be truncated; note the great increase in the results when compared to the search on page 1 where the same terms were used but not truncated.*
RESULT 249

..purge all ← *user enters ..PURGE command requesting that all outstanding set numbers be erased. (Selected set numbers or ranges of numbers may also be erased—e.g., ..purge 3).*
QUERIES HAVE BEEN PURGED

1: computer with crime ← *WITH operator requires terms to be in the same* sentence
RESULT 54

2: computer adj crime ← *ADJ operator requires terms to be immediately* adjacent
RESULT 23

3: computer$ adj crime$1 ← *positional operators may be used with truncated terms*
RESULT 48

4: computer$ adj (crime$1 criminal$1 fraud$)
RESULT 97

5: 4 and (legislat$ law$1 legal$ jurisprudence attorn$3) ← *positional operators and Boolean operators may be combined*
RESULT 26

6: computer$ adj (crime$1 fraud$) with (legislat$ law$1 legal$ jurisprudence attorn$3) ← *both levels of positional operators can be used in the same set*
RESULT 15

7: computers ← *term is entered* unqualified—*COMPUTERS in any field of document*
RESULT 5878

8: computers.ti. ← positive *qualification—COMPUTERS in the titles, only*
RESULT 286

9: computers..ab. ← negative *qualification—COMPUTERS in any field* except *the abstract*
RESULT 5664

10: fraud$.ti,ab. ← multiple *qualification—FRAUD (+ variants) in titles or abstracts*
RESULT 551

11: 7.ti. ← *"after the fact" qualification of set numbers*
RESULT 286

12: 6.ti.
RESULT 1

13: ..print 12 ti/doc=1 ← *user requests print of title of first document from set 12*
1
TI LEGISLATION PROPOSED AGAINST COMPUTER FRAUD.

..change/eric ← *users enters ..CHANGE command to change over to the ERIC database*
CONNECT TIME 0:07 HH:MM ← *connect time given automatically when user changes databases*

THE LIMIT FEATURE

Users may limit search results by language, date of publication, and other "fixed" field data using the BRS ..LIMIT command.

To save time and confusion for the user, language and publication date codes have been *standardized* across all BRS databases.

OFFLINE SEARCHING AND THE UNIQUE PRINTHOLD CAPABILITY

BRS provides for the *cost-effective* offline searching of earlier years of larger databases such as MEDLARS. Users may have the results of their offline searches mailed to them the following day, or may take advantage of the unique PRINTHOLD capability which permits *next-day online printing* of offline search results.

ONLINE USER ACCOUNTING SYSTEM

An individualized accounting database is available online to each BRS user. This database contains usage statistics for the particular password holder by database (online and offline) as well as master record information such as offline mailing address, etc., which the user can *update at any time online.*

Statistics available in the record include total number of connect hours (total as well as by database), number of offline pages and citations printed, and number of automatic SDI profiles processed. Usage is given for the current month, and for the year-to-date. The records are updated nightly with the current day's activity, so that the usage statistics are always current as of the day of inquiry.

A totally unique feature of the system is the storage in each user's master record of the list of default printing fields, by database, preferred by that user. This set can be updated by the user at any time, with the new set effective immediately.

```
BRS/MESH/1976-JAN79          <-- (user has signed on to MEDLARS database)
BRS-SEARCH MODE-ENTER QUERY
1:  laetrile
RESULT      69
2:  ..limit/1 lg=en          <-- user enters ..LIMIT command to restrict results of set 1 to the citations that are in English
RESULT      63
3:  ..limit/1 lg=en,sp       <-- multiple limit—user wants citations in either English or Spanish
RESULT      67
4:  ..limit/3 yr=78          <-- user requests limit of set 3 to citations published in 1978
RESULT      31
5:  limit/1 lg=en,sp and yr=78   <-- limits to different fields can be combined in one set
RESULT      31
6:  ..searchoff 3 bibl/doc=all/yr=all/id=smith,j/sort=so   <-- user enters ..SEARCHOFF command requesting offline search of all back years of MEDLARS (1966-75)
YOUR OFFLINE QUERY HAS BEEN SAVED UNDER THE NAME OF Q0003
ENTER DATABASE NAME: hold    <-- on the following day, user enters HOLD file to get results of offline search entered on previous day for MEDLARS backfile.
BRS-SEARCH MODE QUERY
1:  ..print q0003
     **SEGMENT**   **DOCS**   **DOC RANGES**
        ME75          26          1    26
        ME74          13         27    39
        ME71          10         40    49
        ME68           5         50    54
        TOTL          54
                             <-- system displays the results of the laetrile search from all the offline years of the MEDLARS database that were requested in the ..searchoff on previous day
ENTER PRINTHOLD REQUEST:
     all                     <-- user requests that all 54 citations now be printed online (ranges of documents may also be requested)
ENTER DATABASE NAME:  acct   <-- user requests entry into his own accounting file
SPECIFY DATABASE NAME, TOTAL, ALL, MASTER OR PROFILE
     total                   <-- user requests statistics for his total usage across all databases (can also request stats on usage for specific files)
BRS USAGE      USER=PASWRD      DATABASE=ALL      12/19/78
          ONHRS   OFFHRS  SDIHRS  OFFCIT  PRTCIT  SDICIT
L MO    0013.25  0000.08  000.00  000024  000071  00019
YTM     0122.39  0000.60  000.05  002224  009963  00175
MTD     0004.62  0000.00  000.02  000030  000023  00026
SPECIFY DATABASE NAME, TOTAL, ALL, MASTER OR PROFILE
     master                  <-- user asks to have his BRS master accounting profile displayed
USER ID: PASWRD   CONTRACT TYPE:  SB
CONT BEGINS:  0/10/77   CONT ENDS:  12/31/78
ACCUM MESH HRS:  10.37   ACCUM NON-MESH HRS:  112.02
NON MESH RATE:  $16.00   MIN DOLLAR USAGE:  $3,800.00
ACCESS MODE:  TL   COMMUNICATIONS RATE:  $5.00
MASTER BILL INDICATOR:  N   ORDER NUMBER:  PO123456
TELE:  (518)374-5011   TERM TYPE:  TI745
TYPE:  IND   MANUALS:  01
MARK REP:  E. MARLOW   S   ANALYST:  JANE SMITH
*********OFFLINE MAILING ADDRESS*********
JANE SMITH
UNIVERSITY LIBRARY, ALL AMERICAN UNIVERSITY
10000 UNIVERSITY AVENUE
UNIVERSITY, US  12345
**************BILLING ADDRESS**************
J. R. BURNS, DIRECTOR
UNIVERSITY LIBRARY, ALL AMERICAN UNIVERSITY
10000  UNIVERSITY AVENUE
UNIVERSITY, US  12345
SPECIFY DATABASE NAME, TOTAL, ALL, MASTER OR PROFILE
     profile                 <-- user requests change to his master profile
ENTER NO. CORRESPONDING TO CHANGE
1:  OFFLINE MAILING ADDRESS   2:  PARA BIBL   3:  TERMINAL TYPE
4:  TELEPHONE No.   5:  SEARCH ANALYST   6:  PASSWORD   7:  END PROFILE
     1                       <-- specifically, user wants to change the name on his offline mailing address
ENTER NAME (38 CHARACTERS MAX)
     sally jones
ENTER INSTITUTION  (CR)      <-- (CR) indicates that current info is to remain unchanged
ENTER ADDRESS  (CR)
ENTER CITY, STATE AND ZIP
PROFILE HAS BEEN UPDATED
```

SAVESEARCH FEATURE

Utilizing the BRS "save" feature, the user may request that a profile be stored by the system for processing at a future time. A search can be profiled on one database, saved, and then called up for automatic reprocessing on other databases.

In the sample reproduced here, the user formulated a free-text profile on the ERIC database on the topic of "Behavior therapy for learning or reading disorders". After results from ERIC were obtained, the user saved the profile, changed into the PSYCH ABSTRACTS database, and called the saved profile up for automatic reprocessing. After seeing results, the stored profile was further modified.

AUTOMATIC SDI FEATURE WITH ONLINE EDITING CAPABILITY

Users may have profiles stored at BRS for automatic updating each month by simply entering the ..SDI command at the completion of the profile. The user can specify the expiration date of the SDI service upon entry of the request, and can also cancel the stored SDI online at any time using the unique number assigned by the system at time of entry.

In addition, BRS provides a unique online editing facility so that it is possible to call up a stored SDI profile at any time and easily modify the existing profile by adding new terms, deleting old terms, or inserting new statements.

```
BRS/ERIC/NOV78

BRS-SEARCH MODE-ENTER QUERY
1:   (learning reading) with (disorder$1  disabilit$3  difficult$3)
RESULT        2872                          <-- user formulates profile on the ERIC database

2:   behavior adj  (modification therapy)
RESULT        942

3:   1 and 2
RESULT        33

4:   ..save read                            <-- user enters ..SAVE command requesting that the profile be stored in the system and assigns the label "read"
QUERIES HAVE BEEN SAVED.

..change/psyc                               <-- user changes into the PSYCH ABS database

CONNECT TIME          0:07      HH:MM

BRS/PSYC/1967-NOV78

BRS-SEARCH MODE-ENTER QUERY
1:   ..exec read                            <-- user enters the ..EXEC command to call up stored search labeled "read"
BRS-SEARCH MODE

00001  (LEARNING OR READING) WITH (DISORDER$1 DISABILIT$3 DIFFICULT$3)
RESULT        2155
00002  BEHAVIOR ADJ (THERAPY MODIFICATION)  <-- system automatically re-executes the stored profile
RESULT        2378
00003          1 AND 2
RESULT          35
NO MORE QUERIES-EXECUTION ENDED

ENTER COMMAND:
     ..search
BRS-SEARCH MODE-ENTER QUERY
4:   2.ti.                                  <-- user can now further modify profile if necessary
RESULT        948

5:   1 and 4
RESULT        15

6:   ..sdi  5  bibl/id=smith,j/exp=7912     <-- user enters ..SDI command to request automatic monthly processing by BRS until December 1979.
YOUR OFFLINE QUERY HAS BEEN SAVED UNDER THE NAME OF Q0078

7:   ..edit                                 <-- user enters ..EDIT command and indicates that he wants to edit stored profile No. Q0078
ENTER Q NUMBER
     q00078
ENTER EDIT REQUEST
     list                                   <-- user asks first to have the existing stored profile displayed
00001    (LEARNING OR READING) WITH (DISORDER$1 DISABILIT$3 DIFFICULT$3)
00002    BEHAVIOR ADJ (THERAPY MODIFICATION)
00003    1 AND 2
00004    2.ti.
00005    1 AND 4

ENTER EDIT REQUEST
     delete 4,5                             <-- user asks system to delete lines 4 and 5 from the profile
ENTER EDIT REQUEST
     C 1                                    <-- user requests a change to line 1 and enters new information
ENTER QUERY
     (learning or reading) with (disorder$1 or disabilit$3) or dyslexia
ENTER EDIT REQUEST
     list                                   <-- user requests display of edited profile for verification
00001    (LEARNING OR READING) WITH (D  SORDER$1 OR DISABILIT$3) OR DYSLEXIA
00002    BEHAVIOR ADJ (THERAPY MODIFICATION)
00003    1 AND 2

ENTER EDIT REQUEST
     save                                   <-- user re-stores edited profile
SAVED
ENTER EDIT REQUEST
     end
BRS-SEARCH MODE-ENTER QUERY
7:   ..change/mesh
```

BRS/CROSS. . . A UNIQUE CROSS-DATABASE SEARCH CAPABILITY

Because of the growing number of search topics with cross-disciplinary interest, online searchers and reference librarians must routinely consider many databases as potential information sources. To make it easier for searchers to determine quickly which database/s of all those available online contain citations on the topic at hand, BRS has developed an automatic cross-database search capability.

HOW DOES BRS/CROSS WORK?

By signing in to an online "postings" database called BRS/CROSS, users can quickly obtain the actual results of search terms as they appear in the Dictionary Files of all publically-available BRS online databases. Searchers are given the option of looking at the postings from *all* BRS databases, from preselected *groups* of databases such as the Life Sciences, Social Sciences, etc., or from any set of databases specified by the user.

In addition to providing the postings for *single term* search entries, BRS/CROSS also permits the user to enter search statements containing either Boolean or positional operators and to use standard truncation and qualification techniques. However, it is suggested that searches on the BRS/CROSS database be kept to relatively simple statements with natural language terms for optimum efficiency.

It is not possible to request any document printing while in the BRS/CROSS database. It is only to be used as a *directory file* to assist the searcher in selecting appropriate databases which must than be searched individually.

SAMPLE SEARCHES ON THE BRS/CROSS DATABASE

ENTER DATABASE NAME_: cros
BRS/CROS
ENTER DATABASE CATEGORY NUMBER:
1. ALL 2. LIFE SCIENCES 3. PHYSICAL SCIENCES
4. BUSINESS 5. SOCIAL SCIENCES 6. USER OPTION _: 1 ← *User chooses category 1 (all databases)*
BRS-SEARCH MODE-ENTER QUERY

1_: smoking ← *User enters single term search on smoking*

BIOL	1896
BOOK	85
CAIN	155
CHEM	449
DISS	195
DRUG	133
ECER	17
EIST	1
ERIC	344
INFO	68
INSP	6
MDOC	36
MESH	3364
MGMT	24
NIMI	48
NTIS	220
PNIA	12
POLL	17
PSYC	992
SSCI	437

← *System lists number of documents containing the term smoking in the online portion of each BRS database*

BRS-SEARCH MODE-ENTER QUERY

1_: (smoking or cigarette$1) and cancer.ti. ← *The full range of BRS logical operators, truncation options and field qualification techniques can be used.*

BIOL	160
BOOK	1
CAIN	2
CHEM	8
DISS	3
DRUG	4
ECER	0
EIST	0
ERIC	1
INFO	3
INSP	1
MDOC	0
MESH	235
MGMT	0
NIMI	0
NTIS	16
PNIA	0
POLL	1
PSYC	2
SSCI	14

← *System lists number of documents containing either the term smoking or cigarette/s and that also have the term cancer in the title.*